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## **NSWC Port Hueneme Creates Next Generation of Shipboard Combat Systems Installations**

PORT HUENEME, Calif. – Naval Surface Warfare Center (NSWC) Port Hueneme is currently conducting a next generation installation of ship defense systems onboard USS George Washington (CVN 73), which will run through September 2007, and USS Abraham Lincoln (CVN 72), which will run through March 2007.

NSWC Port Hueneme's Ship Defense Department Modernization and Installation Division teamed with Alteration Installation Team (AIT) contractor, Raytheon Technical Services Co. to streamline the AIT efforts by eliminating waste and combining processes to increase efficiencies. This raises the bar of the results expected during ship installations through a series of process improvement projects. Using shipboard installation developed processes, the team created innovative solutions to make the installation of combat systems onboard aircraft carriers more efficient, cost-effective and safe.

"Prior to our first installation onboard USS Harry S. Truman (CVN 75), installation team members from NSWC Port Hueneme and Raytheon, which included engineers and Lean Six Sigma Black Belts, utilized the Raytheon Six Sigma and Navy Lean Six Sigma methodologies of the "Blitz" approach to rapidly identify and prioritize process improvement projects," said Joe Bislig, NSWC Port Hueneme systems engineer. "The team defined the current state of the AIT through the analysis of the value stream for shipboard installation processes. The team identified their desired future state and centered their attention on identifying issues that adversely affect the AIT process."

The results were the foundation for the next generation of Integrated Ship Defense (ISD) technical and engineering services. Five improvement projects were identified at the completion of the Blitz and focused on establishing cost savings initiatives, improving schedule performance, increasing accuracy and responsiveness, and enhancing quality. The use of Lean/Six Sigma tools improved the entire installation process.

The team's successes were measured in phenomenal results. Forward and aft installations of the Rolling Airframe Missile (RAM) onboard Harry S. Truman were completed in only 16 weeks – six months ahead of any other recorded RAM installation. This was a critical demonstration of the RAM program's ability to install RAM systems during shorter length ship availabilities. This event occurred during Harry S. Truman's fiscal year 2006 Docking Phased Incremental Availability.

"The significance of the on-time completion of this install was huge; it set the stage for future CVN installs," commented RAM program manager, Capt. T. Atkinson.

Improvements to the Ship Check Documentation, Work Authorization Form, administrative processes and execution efficiencies resulted in Harry S. Truman's AIT completion 12 percent under budget. The RAM systems were free from installation problems or errors – cutting the industrial testing phase from six weeks to just three weeks. The process improvements carried

forward to the next AIT installations onboard USS Nimitz (CVN 68), USS Washington (CVN 73) and USS Lincoln (CVN 72).

Other improvement projects included: reducing material management time; standardizing the Condition Deficiency Reports; consolidating Plans of Action and Milestones; improving performance on Statements of Work; refining the integrated logistics support certification process; implementing a lessons learned database; and improving administrative processes.